

Abstracts

A501

associated with significantly lower inpatient (\$4,212 vs \$7,532, $p < 0.0001$), outpatient (\$9,501 vs \$12,885, $p < 0.0001$), and emergency room costs (\$82 vs \$131, $p < 0.0001$) and significantly higher drug costs (\$6,885 vs \$5,936, $p < 0.0001$). Similarly, the use of exenatide compared to insulin glargine was also associated with significantly lower diabetes-related inpatient (\$2172 vs \$3538, $p < 0.0001$) and outpatient costs (\$2739 vs \$3249, $p < 0.0001$) and significantly higher diabetes-related drug costs (\$3160 vs \$2424, $p < 0.0001$). **CONCLUSIONS:** Use of exenatide, compared to insulin glargine, was found to be associated with significantly lower annual total direct medical costs and total diabetes related medical costs even though diabetes related and total drug costs were higher.

PDB18

A COMPARISON OF COSTS AMONG PATIENTS WITH TYPE 2 DIABETES WHO INITIATED THERAPY WITH EXENATIDE OR SITAGLIPTIN

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OBJECTIVES: Compare costs among patients with type 2 diabetes (T2D) treated with either exenatide or sitagliptin, novel incretin therapies with differing clinical effectiveness. **METHODS:** Data from September 2004 to September 2007 were obtained from a large, retrospective, claims database. Data from intent-to-treat cohorts of adults with T2D who initiated therapy on either exenatide (N = 1614) or sitagliptin (N = 2482) and who did not use the other medication in the six-month follow-up period were examined. Total medical costs and total diabetes-related medical costs were estimated using stepwise multivariate regressions. Major cost components were also examined using either stepwise multivariate regressions or a two-part model that controlled for the probability of using the service. Smearing estimates were used to transform estimated log costs into costs. The analyses controls for the potential impact of patient demographics, general health, prior resource use, comorbidities, and timing of treatment initiation. **RESULTS:** Initiation on therapy with exenatide, compared to sitagliptin, was associated with significantly lower total direct medical costs (\$8736 vs \$9995, $p < 0.0001$) and total diabetes-related medical costs (\$3841 vs \$4002, $p < 0.0001$). Initiation of therapy with exenatide compared to sitagliptin was also associated with significantly lower inpatient (\$745 vs \$3624, $p < 0.0001$), outpatient (\$4269 vs \$5942, $p < 0.0001$), drug (\$3467 vs \$3611, $p < 0.0001$) and emergency room costs (\$16 vs \$44, $p < 0.0001$). Similarly, the use of exenatide compared to sitagliptin was associated with significantly lower diabetes-related inpatient (\$448 vs \$1847, $p < 0.0001$) and drug costs (\$1,677 vs \$1743, $p < 0.0001$). **CONCLUSIONS:** Use of exenatide compared to sitagliptin over six months is associated with significantly lower total direct medical costs and total diabetes-related medical costs. In addition, exenatide was associated with significantly lower total inpatient, outpatient, drug, and emergency room costs and significantly lower diabetes-related inpatient and drug costs.

PDB19

ESTIMATING THE COST EFFECTIVENESS IN THE UK OF VILDAGLIPTIN COMPARED TO PIOGLITAZONE AS ADD-ON THERAPY TO METFORMIN USING THE SHEFFIELD TYPE 2 DIABETES MODEL

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OBJECTIVES: Vildagliptin is an alternative option to glitazones when treatment intensification is required due to loss of glycae-

mic control. Our analysis compares the clinical and cost-utility effects of these alternative treatments. **METHODS:** The analysis uses the Novartis 24-week 2354 study results comparing vildagliptin 50mg BID to pioglitazone 30mg qd. The Sheffield Type 2 Diabetes Model, a patient-level disease management model, simulates use of therapies, clinical events, treatment of complications and mortality. Costs, including the £1.13 vildagliptin daily price and £1.20 for pioglitazone, and quality-of-life (QoL) effects, including those related to complications and weight effect of therapies, were aggregated to obtain the incremental cost per QALY. Uncertainty around key parameters, such as weight effects and long-term HbA1c trends, was explored using probabilistic sensitivity analysis and scenarios. **RESULTS:** Assuming equal long-term HbA1c trends, the point estimate suggests that vildagliptin is cost effective compared to pioglitazone with a cost saving of £88 and reduction in QALYs of 0.0006. The marginal net benefit of vildagliptin compared to pioglitazone is £77 (95% C.I. -23 to 177) with a 62% likelihood that vildagliptin is cost effective at a UK notional £20,000 cost/QALY threshold. The main driver is the cheaper cost of vildagliptin. There is a small QALY loss due to fewer CHD events with pioglitazone arising from its superior lipid effects, although this is mitigated by the QALY gain due to the weight neutrality of vildagliptin. The long-term HbA1c trends are highly important but uncertain assumptions, and conclusions about the cost effectiveness could change if evidence for different trends emerged. **CONCLUSIONS:** The expected differences in lifetime costs and QALYs between vildagliptin and pioglitazone are small, with considerable uncertainty around key parameters. Results suggest a 62% likelihood that vildagliptin is cost effective compared to pioglitazone at a £20,000 cost/QALY threshold assuming similar long-term HbA1c trends.

PDB20

LONG-TERM COST-EFFECTIVENESS OF INSULIN DETEMIR COMPARED TO NEUTRAL PROTAMINE HAGEDORN INSULIN IN PATIENTS WITH TYPE 1 DIABETES USING A BASAL-BOLUS REGIMEN IN BELGIUM, FRANCE, GERMANY, ITALY AND SPAIN

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OBJECTIVES: The aim of this analysis was to evaluate the long-term clinical and economic outcomes associated with insulin detemir and Neutral Protamine Hagedorn (NPH) insulin in combination with mealtime insulin aspart in patients with type 1 diabetes in the Belgian, French, German, Italian and Spanish settings. **METHODS:** A published and validated computer simulation model of diabetes (CORE Diabetes Model) was used to make long-term projections of life-expectancy, quality-adjusted life expectancy and direct medical costs. The analysis was based on patient characteristics and treatment effects from a 2-year, multi-national, open-label, randomized, controlled trial. In the trial, insulin detemir was associated with significant improvements in glycemic control after 24 months (HbA1c 7.36% versus 7.58%, mean difference -0.22%, $P = 0.022$) and major hypoglycemic events (69% risk reduction, $P = 0.001$) versus NPH. Patients treated with detemir gained less weight (1.7 versus 2.7 kg, $P = 0.024$). Events were projected for a time horizon of 50 years. **RESULTS:** Basal-bolus therapy with insulin detemir was projected to improve quality-adjusted life expectancy by 0.45 years (7.04 versus 6.59 years) versus NPH in the German setting. Similar improvements were observed in the other countries (Belgium +0.52, France +0.55, Italy +0.58 and Spain +0.40 years). Insulin detemir was associated with cost savings in